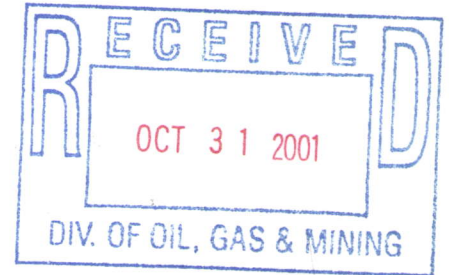




Applied Geotechnical Engineering Consultants, Inc.

August 15, 2001

Geneva Rock Products  
1565 West 400 North  
Orem, UT 84057



Attention: Tony Christofferson  
Fax 765-7830

Subject: Slope Stability Evaluation  
Geneva Rock Gypsum Mine  
Levan, Utah  
AGEC Project No. 1010466

Gentlemen:

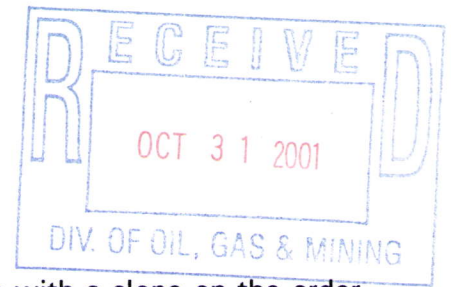
Applied Geotechnical Engineering Consultants, Inc. was requested to evaluate the stability of proposed rock excavations for the gypsum mine located approximately 1 ½ miles southeast of Levan, Utah. The study includes a site reconnaissance, measurements in the field of rock discontinuities, laboratory testing and engineering analysis.

#### **PROPOSED CONSTRUCTION**

Gypsum is being mined from the hillside southeast of Levan, Utah by means of an open excavation. The final excavation for the open-pit mined area will consist of a benched excavation slope with 40 foot high, near vertical walls and 20 foot wide benches. The total planned height of the excavation could be up to approximately 160 feet. The high wall portion of the excavation will have a trend of North 43 degrees East and North 28 degrees East. We anticipate that there may be an excavation slope approximately perpendicular to the high-wall with an orientation of North 46 degrees West.

#### **SITE CONDITIONS**

The site is presently being mined for gypsum. The existing excavations consist of an approximately 80 foot cut with 40 foot high sections and a 20 to 30 foot wide bench between. The excavation is being performed by drilling, blasting and loading material into haul trucks.



The natural ground in the area of excavation consists of a hillside with a slope on the order of between 2 and 2½ horizontal to 1 vertical. The slope of the natural ground is down toward the west and northwest.

Vegetation of the natural ground consists of grass, brush and trees. There are some bedrock outcrops in the area of undisturbed ground.

The bedrock exposed in the excavations and in outcrops in the area consists of the Jurassic-aged Arapien Shale based on mapping provided by Geneva Rock Products.

The bedrock is relatively massive with some jointing in the direction of bedding and near vertical orientations. Discontinuities were measured in the field at the area being excavated and in nearby outcrops. Measurements of the discontinuity orientations were plotted on a stereonet and the average orientation of the discontinuity determined. The following is a summary of the average orientation of the measured discontinuities.

DISCONTINUITY	STRIKE, DEGREES	DIP, DEGREES
Bedding	N 32 W	26 SW
Dominant Joint	N 17 W	79 E
Dominant Joint	N 86 E	85 N
Stepped Rock Joint	N 71 W	79 N
Fracture from Blasting	N 23 E	75 NW
Fracture from Blasting	N 53 W	80 SW

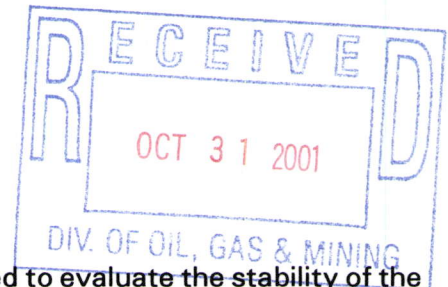
The discontinuities generally consist of irregular, relatively rough surfaces with some cementation of the discontinuities.

#### LABORATORY TESTING

Samples of the rock being excavated were obtained for laboratory testing. Unconfined compressive strength tests were performed on 3 samples of the rock. Unconfined compressive strengths of 2,220, 2,840 and 4,980 pounds per square inch were measured.

Blocks of the rock were placed with their joints and/or bedding planes against each other and tilted to determine the angle at which the rock slid. The average measured angles for the tests indicate that the bedding plane has a friction angle of 40 degrees and the joints have a friction angle of 42 degrees.





### ENGINEERING ANALYSIS

Results of the field observations and laboratory tests were used to evaluate the stability of the rock excavation slopes for the 3 proposed slope orientations indicated above. The average discontinuity orientations were plotted on a stereonet and the safety factors for each of the interfaces between discontinuities was determined assuming a friction angle of 40 degrees for the bedding plane and 42 degrees for joint faces.

Safety factors were also determined for sliding along bedding and joint planes.

### CONCLUSIONS AND RECOMMENDATIONS

1. Based on the conditions observed at the site, laboratory testing and engineering analysis, the two high-wall excavation slopes with orientation of North 40 degrees East and North 28 degrees East, will have a safety factor against failure of 1.7 for the proposed 40 foot high, 20 foot wide benches if the face of the 40 foot excavation is sloped back to at least 0.2 horizontal to 1 vertical and the blast produced fractures can be eliminated.. The need to slope the face of the excavation is due to a joint set which was observed to dip at approximately 0.1 horizontal to 1 vertical in the direction of the cut face. This assumes that similar conditions are encountered as the excavation is developed. This also assumes that there is no build up of water in the slope.
2. The excavation slope which would be oriented in a general perpendicular direction to the high-wall excavation with orientation of North 46 degrees West will not have a stable configuration with respect to rock discontinuities if constructed with a steep face. The excavation face should be sloped to 1.3 horizontal to 1 vertical or flatter, to provide for a safety factor against failure of at least 1.2.
3. Development of the final rock face should be performed using blasting techniques which minimize fracturing of the rock behind the slope face. Consideration may be given to using special blasting techniques such as buffer blasting, presplit blasting and smoothwall blasting. Care should be taken to not use excessively high blast energies which would result in fracturing of the rock face to remain.

### LIMITATIONS

This letter has been prepared in accordance with generally accepted geotechnical engineering practices in the area for the use of the client for design purposes. The conclusions and recommendations included in the report are based on the information obtained from field measurements, laboratory testing and engineering analysis as described in the report. Variations in the subsurface conditions may not become evident until additional exploration or excavation is conducted. Rock conditions with measurements of rock discontinuities

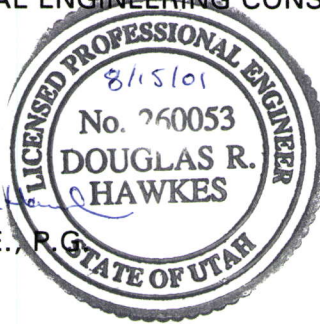
August 15, 2001  
Geneva Rock Products  
Page 4

should be performed as the excavation is developed to determine if the orientation of the discontinuities is similar to those describe above. If orientations of discontinuities or variations in the rock condition vary significantly from what are describe above, we should be notified so that we can re-evaluate the recommendations given.

If you have any questions, or if we can be of further service, please call.

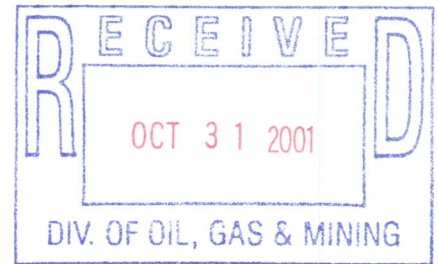
Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.



Douglas R. Hawkes, P.E., R.G.

Reviewed by JEN, P.E.  
DRH/dc





**RESPONSE TO:**

**REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING  
OPERATIONS**

**GENEVA ROCK PRODUCTS, INC.  
LEVAN GYPSUM MINE**

**M/023/016**  
October 30, 2001

**R647-4-105 – Maps Drawings & Photographs**

105.1 See new maps II - C1 and II – C2

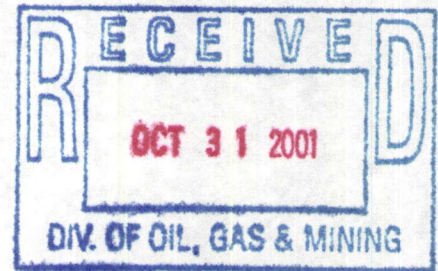
See new maps II - D & II – E

105.2 See attached response 105.2

See new maps II – E & III - B

105.3 See new map II – E

See new cross section of highwall



**R647-4-106 – Operation Plan**

106.3 See new page 106.3 **and**  
See attached response 106.3

106.6 See new page 106.6

See attached response 106.6

106.9 See new map II – D **and**  
See new map III – B

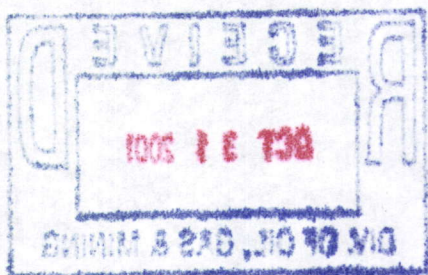
**R647-4-107 – Operation Practices**

107.1 See new page IV-1 (area was included in est. surface disturbed) **and**  
See new map II – D

107.2 See attached response 107.2

107.3 See new map II – D **and**  
See new map III – B **and**

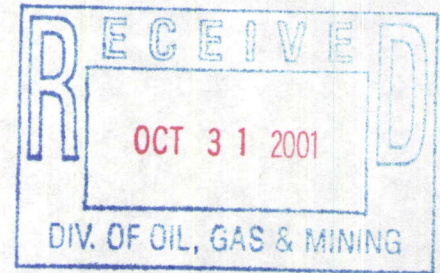






See new page IV – 1 **and**  
See attached response 107.3

- 107.4 See new map II – D **and**  
See new page IV - 2



**R647-4-109 – Impact Assessment**

- 109.2 See report from Mt. Nebo Scientific, Inc.
- 109.4 See new page 109.4 (changed from berm to fence)

**R647-4-110 – Reclamation Plan**

- 110.1 See new page 110.1 **and**  
See new map II- E
- 110.2 See request for variance R647-4-113
- Mine floor will be considered “slopes” for post mining reclamation **and**  
See new map II – D **and**  
See new page 110.2
- 110.3 See new page 110.1 **and**  
See new page 110.3
- 110.5 See new page 110.5 (VII – 6)
- See new page 110.5 (VII – 8)

**R647-4-111 – Reclamation Practices**

- 111.1 See new page IV – 1 (no parts or equipment will be buried)
- 111.2 See 107.2
- 111.7 See R647-4-112 Variance
- 111.8 See 110.1 and 110.3
- 111.9 See attached response 111.9 **and**  
New page VIII – 1 (Variance)

**R647- 4-112 – Variance**

See new cross section of highwall (overall slope .7 :1)



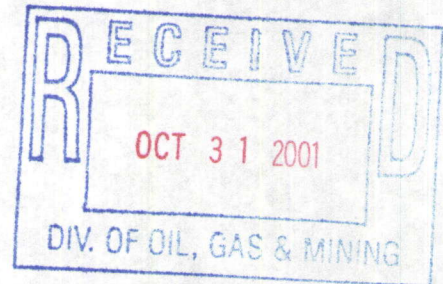
See report from AGECC (geotechnical study) and  
See new page 109.4

**R647-4-113 – Surety**

See new estimate sheet

**R647-4-115 – Confidential Information**

The only thing that needs to be held confidential is the information on the Eagles nests. The location of the nests was given reluctantly by the Division of Wildlife Resources and they have asked that it not be made public because of fears of vandalism and poaching.

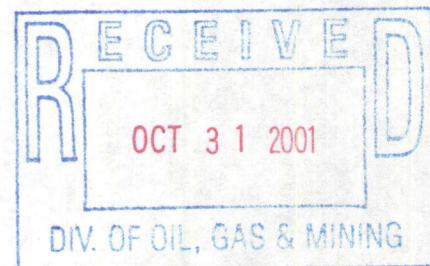




## 105.2 Response

There are two reasons that the cut and fill of the haul roads are not shown on the maps. The first reason is the fact that at the scale that the maps are being presented it would be difficult to see enough detail in the roads to be of any use. The lines for the road would be close together and each line would represent several feet on the ground.

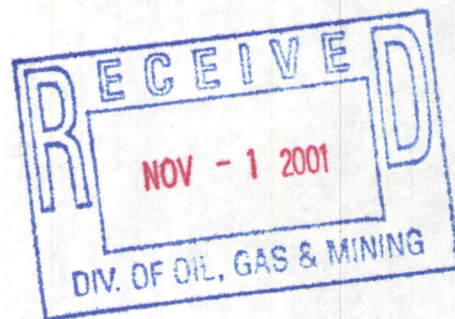
The other reason is that it would be very difficult and expensive to get an accurate survey of the cut and fills. The method of measurement, that was agreed upon in the field with several representatives of DOGM, was that we would measure the centerline of the road and determine the length of the road, then multiply the length of the road by 22 feet, as an average width, to determine the area disturbed. Since that time Geneva Rock has decided to increase the width used in the calculation to 25 feet. The 25 foot measurement seems to be a more representative average of what is in the field.



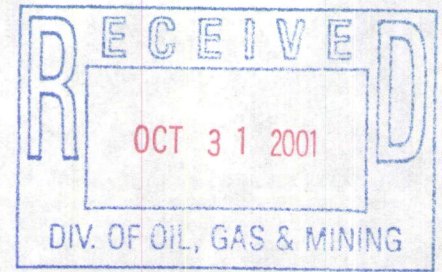


### 106.3 Estimated acreage

Areas of actual mining:	_____31.35_____
Overburden/waste dumps:	Included in mining area
Ore and product stockpiles:	_____2.12_____
Access/haul roads:	_____6.38_____
Associated on-site processing facilities:	_____3_____
Tailings disposal:	_____0_____
Other – Please describe:	_____0_____
<b>Total Acreage</b>	<b>_____42.85_____</b>







### **Minimizing Hazards**

Shafts and tunnels – none on site.

Disposal of trash - A small 20' X 20' "boneyard" will be kept on site during the life of the operation. The "boneyard" will be kept near the crusher. All trash will be hauled off site and disposed of properly. No trash or equipment parts, etc. will be buried. A "port-a-potty" will also be used and maintained for all employees.

Capping holes - any exploratory holes that have been drilled will be consumed by the extraction of the gypsum. Drill holes made for blasting purposes will be consumed in the blasting process.

Posting signs - The following signs will be posted in appropriate places:

Danger High Bank

Hard Hat Area

Danger Flammable Liquid

No Trespassing

Berms and fences – 18" Berms will be used to divert storm water away from disturbed areas to help prevent erosion. A fence will be placed above highwall areas to prevent access. Entrance to the site will be controlled by gates along with the natural vegetation and steepness of the site.

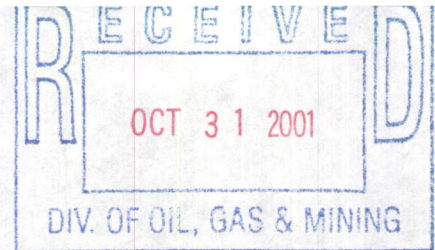
### **Minimizing Damage to Drainage**

Care will be taken to avoid disrupting the natural drainage whenever possible. Any drainage that is impacted will be restored as close to original condition and shape as possible. Berms will be used to keep runoff from disturbed areas from flowing directly into the drainage system, thus helping to avoid silting.

### **Minimizing Sediment and Erosion**

Berms will be constructed at the edges of the disturbed areas to control any runoff water. The berms will prevent runoff from the disturbed areas from flowing directly into the drainage system, thus helping to avoid silting. It is expected that some runoff will flow down the main access road and around the pad used for processing and storing material. A small sediment basin will be constructed where any suspended load in the storm water will have a chance to drop out before the water enters the main drainage system.





### **Deleterious Material Storage and Handling**

Two diesel tanks will be kept on site. The maximum size of each tank will be 12,000 gallons but this may vary from season to season (sometimes being smaller). The average daily inventory will likely be about 10,000 gallons of fuel. The tanks will be kept in a bermed area that is lined with plastic. The tanks will be placed in an area that should the berm be breached any spilled fuel will not enter stream or drainage channels. A SPCC plan will be developed for this site and will be in place before mining begins for the year 2002.

There will also be lube oil stored in 55 gallon drums. The drums will be placed over drip pans when in use. When the drums are empty they will be hauled off site and disposed of properly.

Any small spills of fuel or lube oils will be collected and haul to the Geneva Rock Point of the Mountain facility where the contaminated soil will be burned in the asphalt hot plant. Any large spills will be reported to the Division of Environmental Response and Remediation (DERR) and clean-up efforts will follow their guidelines.

Phone # for DERR 801-536-4100  
Emergencies 801-536-4123

### **Soil Salvage**

Any topsoil removal will be done with a trackhoe. All the soil and any plant matter will be stockpiled together in an area that will be undisturbed by mining activities. A berm will be built around the base of the stockpile to prevent erosion. The berm will also be situated so that storm water will not erode the pile.

Soil removed from roadways will be stored on the shoulder of the road. This will be done to control erosion and act as a safety barrier for vehicles.

### **Stockpiled Topsoil Protection**

A berm will be built around the base of the stockpile to prevent erosion. The stockpile will also be situated so that storm water will not erode the pile.

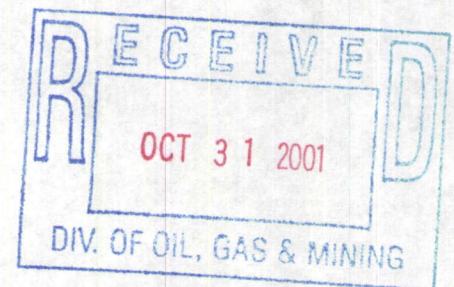
### **Ongoing Reclamation**

Some reclamation will happen concurrently with mining operations including final grading as mining proceeds. Topsoil placement will also take place in certain areas as the mining proceeds because some areas will become inaccessible to large equipment.



### 106.3 Response

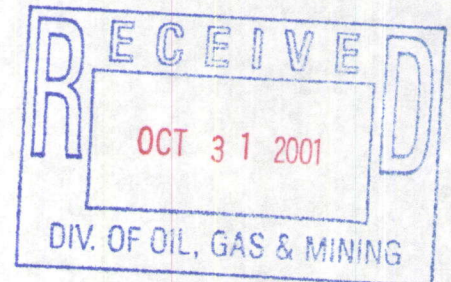
The total acreage for the roads was determined by adding the Lower Access roads, the Mine Access road and the Proposed Access road. When the application was first submitted the total was 6.68 acres. The total has now been changed to 6.38 acres. The Lower Access roads have remained the same The Mine Access road has gone from 3.35 acres to 3.8 acres because we are using 25 feet as the width of the road instead of 22 feet. The Proposed Mine Access road has gone from 2.75 acres to 2.0 acres because while we have increased the width of the proposed road we have also rerouted and shortened it. The new total disturbed area is 42.85 acres.





## 106.6 Response

The depth of soil really ranges from nothing (0") to 40" deep in some areas. There is a large amount of soil and overburden that has been pushed to the north or to the downslope part or the active mine. This material will be used in the reclamation of the site. The roads will be reclaimed with material that was either pushed over the side or has been used to make berms along the road. The volume of material is a ruff calculation of how much material is already stockpiled and how much we think will be generated.





### 106.6 Plan for protecting and re-depositing existing soil

Any soil removal will be done with a trackhoe. All the soil and any plant matter will be stockpiled together in an area that will be undisturbed by mining activities. A berm will be built around the base of the stockpile to prevent erosion. The berm will also be situated so that storm water will not erode the pile. The Soil will be seeded at the end of each season with a quick cover of grass and legumes in order to prevent erosion. The seed mix for the quick cover vegetation will be one recommended by DOGM and will be broadcast at a rate of 6.76 PLS lbs/acre. Soil placement or re-deposition will also be accomplished with the use of a trackhoe and shall be placed at a depth of six inches. Because a trackhoe will be used to place the soil the surface will be left somewhat uneven, however, the uneven surface will be beneficial in preventing erosion. The uneven surface will also help in re-vegetation efforts by holding seeds in depressions higher on slopes and in a more uniform distribution.

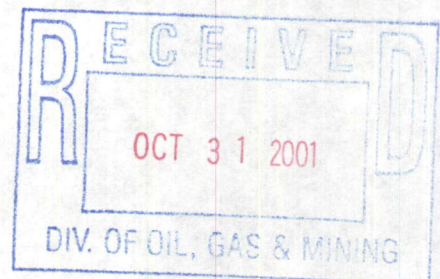
Soil that has been removed from roadways and stored on the shoulders of the road will be replaced using a trackhoe. The soil will be placed to match the original slopes and grades as close as possible.

Thickness of soil material to be salvaged and stockpiled:      \_\_\_ 0 – 40 \_\_\_ in.

Area from which soil material can be salvaged: (show on map)      \_\_\_ 16 \_\_\_ acres

Volume of soil to be stockpiled:      \_\_\_ 14,400 \_\_\_ cy

Much of the soil that will be used for reclamation of the active mining has already been removed from the mining area and stockpiled below the road that enters the active mine. When reclamation is done any extra soil will used to increase the depth of replaced soil from 6" to greater than 6".





## 107.2 Response

Wherever the drainage has been interrupted the new channel will be lined with a stabilization mat. Other appropriate measures such as rip rap will be placed where needed.

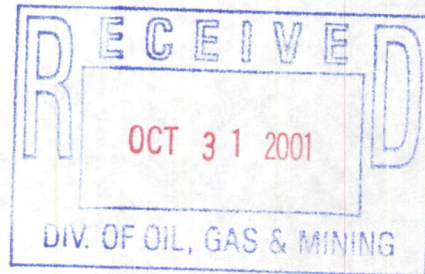
The displaced drainage that is referred to in the NOI is located along the East edge of the lower pad area. The transected drainage along the mine access road is near the top of the collection basin for that drainage and therefore produces a relatively small amount of runoff. The runoff from this area runs onto the road and then down the length of the road.



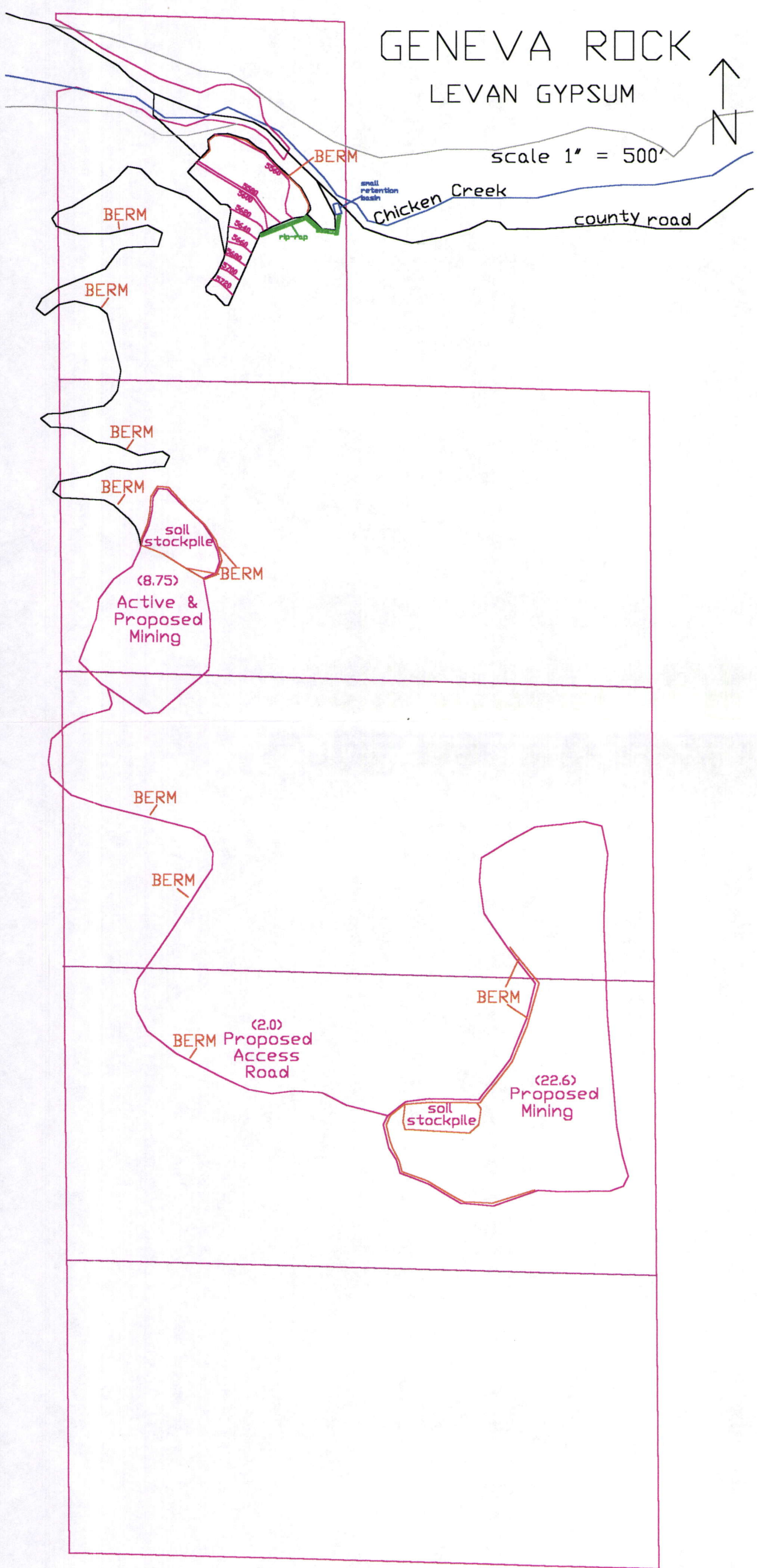


### 107.3 Response

The berms will be a minimum of 18" tall and will be placed on the downhill side of each disturbed area. They will also be placed along the downhill side of the access roads.







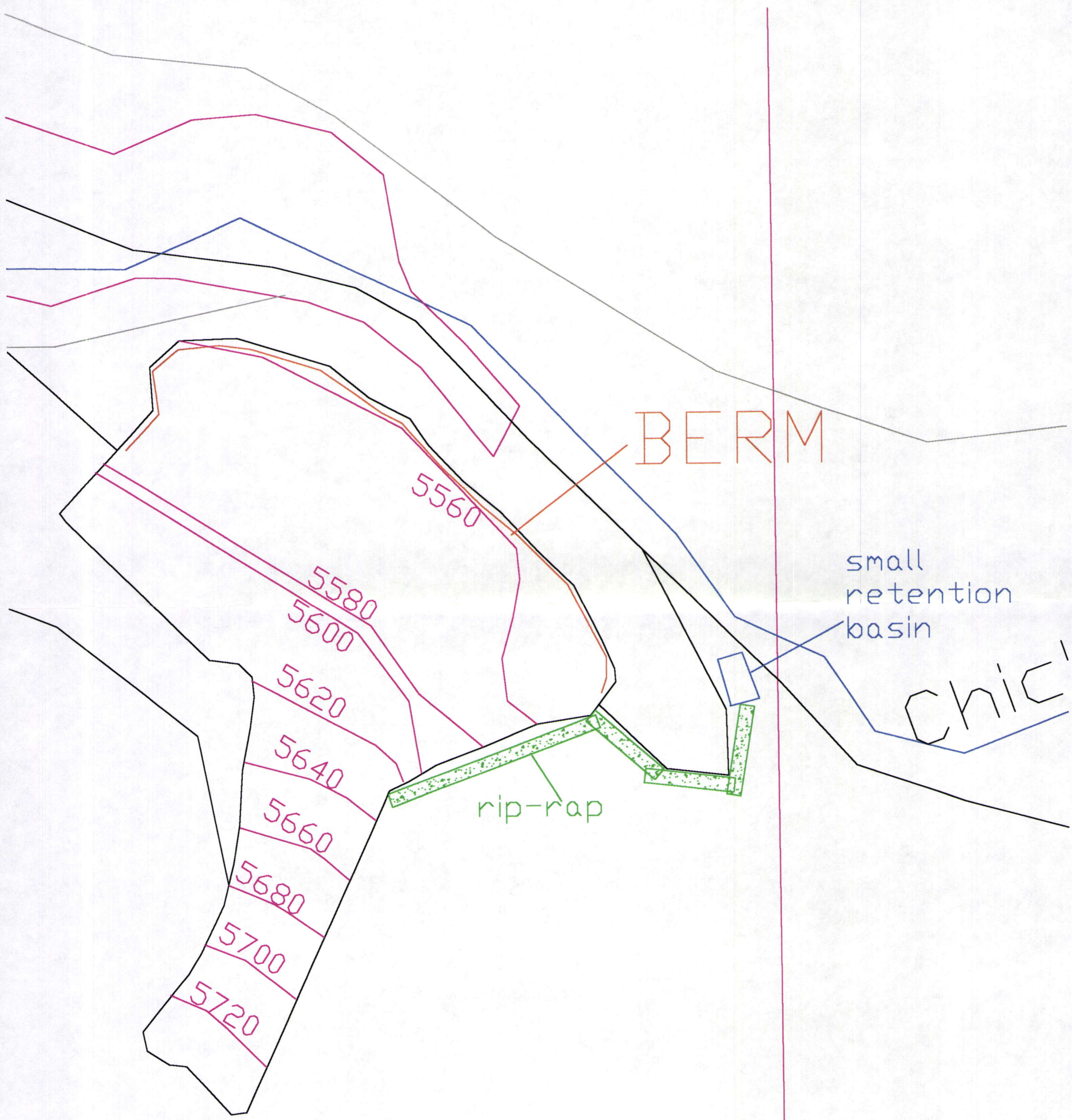
PROPOSED DISTURBED AREA MAP of the LEVAN GYPSUM MINE	
GENEVA ROCK PRODUCTS OREM, UTAH	
(acres disturbed)	
Drawn By: Tony Christofferson	DRG. #
Date: 10/30/01	III - B

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#### **109.4 Slope stability, erosion, air, public health and safety.**

##### Slope Stability and Erosion

Slope stability will not be a major factor at this site because the soils are only .75" to 3 feet in depth. The bedrock is close to the surface and is in fact exposed in many locations. The bedrock is massive and is not highly fractured therefore relatively little mass movement will occur.

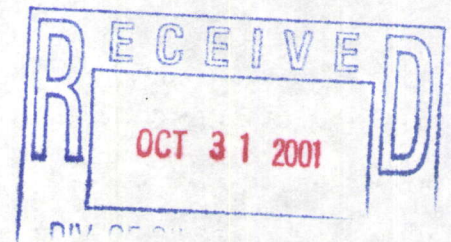
Erosion will be controlled through the use of berms. The berms will be used to keep storm water from running off directly into the drainage system and to keep storm water from running on to soil storage areas. Because the mine is located primarily on bedrock there will be relatively small amounts of material from disturbed areas that would be eroded.

##### Air Quality

Because of the nature of the material that is being mined, some dust will be created in excavation, transportation and processing the gypsum. During excavation care will be taken to reduce the amount of dust generated by using good methods of loading and by reducing the amount the material is handled before loading. The dust generated during transportation can be reduced by the use of magnesium chloride sprayed directly onto the road surface. A water tank will be maintained at the crusher so that spray bars can be used to suppress dust while material is being processed. Geneva Rock will maintain current air quality permits from the Division of Air Quality (DAQ).

##### Public Health and Safety

The mine is registered with the Mining Safety and Health Administration (MSHA) and all rules and regulations will be observed. Workers at the mine are expected to abide MSHA rules as well as company policies regarding safety for their own safety as well as that of the public. Other safety measures will include limiting access to the site will gates. Signs will be posted and a fence consisting of T posts and 3 strands of barb wire will be constructed above high bank areas to warn and protect hikers and hunters. Other signs will installed throughout the site in appropriate locations including "Hard Hat Area", "No Trespassing" and "Danger Flammable Liquid".





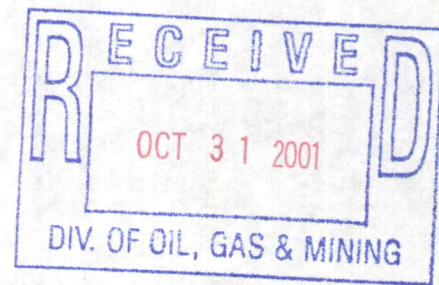
### 110.1 Current land use and post-mining land use.

Current or pre-mining land use(s) [other than mining]: Wildlife Habitat

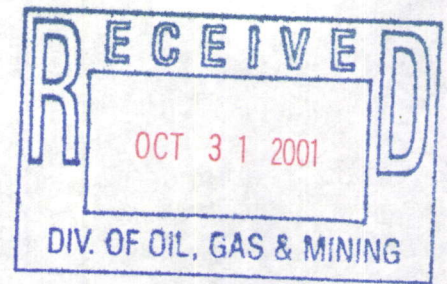
List future post-mining land use(s) proposed: Wildlife Habitat

The US forest service property will revert back to wildlife habitat.

The private property will be used as an equestrian staging area and for camping. This area will include the lower pad that is used for materials processing. The pad is 5.12 acres and the lower access roads leading into and out of the pad (.58 acres) will not be reclaimed to the same standard as the rest of the mining areas and mine access roads. The lower access roads will not be reclaimed. The pad will be graded to eliminate hazards, any compacted areas will be lightly ripped and then seeded with a grass mix.







## **110.2 Reclamation of roads, highwalls, slopes, etc.**

### Reclamation of roads

Soil that has been removed from roadways and stored on the shoulders of the road will be replaced using a trackhoe. The soil will be placed to match the original slopes and grades as close as possible. The roadways will then be hydroseeded

### Reclamation of highwalls

A variance will be requested so that highwalls may be left as the final grade for parts of this mine. The benches of the highwalls will be covered with 6" of soil and then hand broadcast seeded. The area will be raked to help cover the seeds

### Reclamation of slopes

Slopes will be graded in such a way as to tie mined areas back into existing slopes. Roadways will also be graded to match the pre-mining slopes from which they were cut. All slopes will be covered with at least 6" of soil and then seeded.

### Impoundments, pits and ponds to be left

A small sediment pond will be left near the county road on the lowest level of the mine. The pond will be about 200 square feet, 2 to 2 ½ feet deep and will have a capacity of about 1/100<sup>th</sup> of an acre foot. The pond will be in the drainage alignment and will be used to drop sediment out of any storm water that goes through it. The outlet will be the same size as the inlet.

### Reclamation of impoundments, pits and ponds

The only pond that will be built on the site will be kept in operation after the mining is completed. The sediment pond will be left near the county road on the lowest level of the mine. The pond will be about 200 square feet, 2 to 2 ½ feet deep and will have a capacity of about 1/100<sup>th</sup> of an acre foot.

### Reclamation of drainage

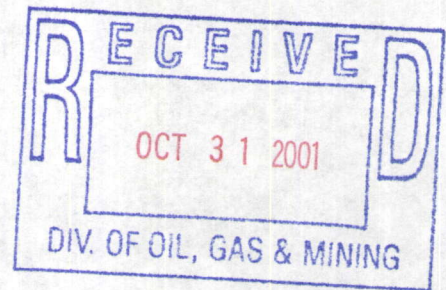
Minimal damage will be done to any drainage system. The most impact will be on the lower level where a pad has been constructed for the processing and storage of material. The drainage area for spring runoff and storm events has been shifted to the east but the grade has been relatively unchanged. This drainage will not be reclaimed because the pad will remain in existence after the mining has ceased.



### **110.3 Surface facilities to be left.**

There will be no surface facilities left on forest service property. All areas will be reclaimed to the standards set forth by the US Forest Service and the Division of Oil, Gas, and Mining.

The access road to the mine that is on private property will be removed from service and reclaimed. All machinery and support equipment will be removed from the site. The pad that is used for material processing and storage will be graded in a manner to eliminate any hazards but will not be reclaimed to the same standard as the rest of the mining areas and mine access roads. The lower access roads will not be reclaimed. The pad will be graded to eliminate hazards, any compacted areas will be lightly ripped and then seeded with a grass mix. The area will be used for equestrian staging and as camping facilities.





### **110.5 Re-vegetation, topsoil and planting.**

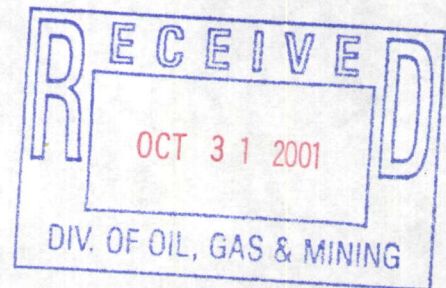
#### **a) Soil Material Replacement**

Soil placement or re-deposition will be accomplished with the use of a trackhoe and shall be placed at a depth of six inches. Because a trackhoe will be used to place the soil the surface will be left somewhat uneven, however, the uneven surface will be beneficial in preventing erosion. The uneven surface will also help in re-vegetation efforts by holding seeds in depressions higher on slopes and in a more uniform distribution.

#### **b) Seed Bed Preparation**

Seedbed preparation will be accomplished as soil is replaced over the mined areas and as roads are closed. Soil placement or re-deposition will be accomplished with the use of a trackhoe and shall be placed at a depth of six inches. The ground will not be scarified because the working surfaces are almost entirely comprised of bedrock. The soil that is replaced will be placed in a manner that will not compact the material and will leave the surface uneven.

To increase the % OM in the soils an application of 10 ton/acre of composted manure will be placed on top of the soil. The manure will be incorporated into the soil either by manual or mechanical means. Care will be given to not compact the soil prior to seeding.





#### d) Seeding Method

Seeding will be done using a couple of methods. The majority of the seeding will be done with hydroseeding technology. The seeds will be placed in a tank that contains water and small amount of fibermulch (as a tracer). This mixture will be sprayed out over the soil surface either through a truck mounted sprayer or through the use of hoses. The mixture will be spread evenly and in a density consistent with the requirements of the seed mixture specifications found under the heading "Seed Mixture".

Some seeding may have to be accomplished by hand broadcasting due to the remoteness or inaccessibility of certain areas or to treat small areas that have been disturbed subsequent to hydroseeding. After the seed is broadcast the area will be raked to cover the seed.

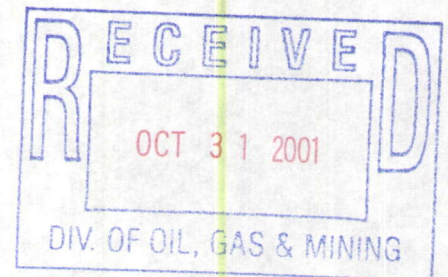
All seeding will be done in the fall of the year when the potential for germination has passed for the season. This will allow the seeds to germinate in the spring where spring precipitation and soil moisture will sustain plants long enough for establishment.

#### e) Fertilization

To increase the % OM in the soils an application of 10 ton/acre of composted manure will be placed on top of the soil. The manure will be incorporated into the soil either by manual or mechanical means. Care will be given to not compact the soil prior to seeding.

#### f) Other Revegetation Procedures

The majority of the seeding will be done with hydroseeding technology. The seeds will be placed in a tank that contains water, fibermulch and a metered amount of generic fertilizer. This mixture will be sprayed out over the soil surface either through a truck mounted sprayer or through the use of hoses. The mixture will be spread evenly and in a density consistent with the requirements of the seed mixture specifications found under the heading "Seed Mixture".



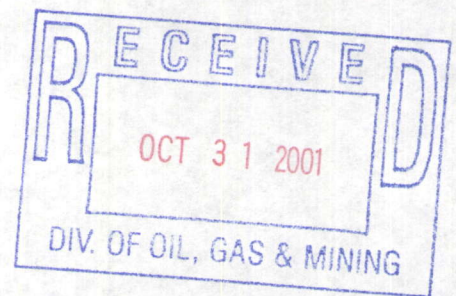


### **High Wall**

Geneva Rock would propose to have high walls as part of the final grading plan because of the steep terrain in which the deposits are found. In order to remove the material a high wall will need to be left. The high walls will be 40' with shelves of 20'. Each shelf will be covered with soil to a depth of six inches and then seeded.

### **Basin or Impoundment**

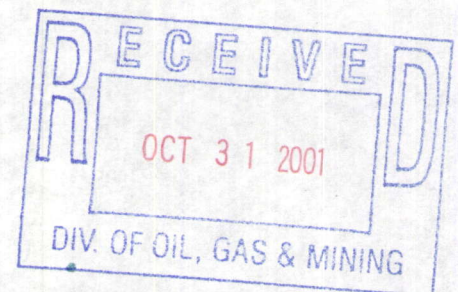
Geneva rock would propose to leave a very small settlement basin (10' X 20'). The purpose of the basin is to catch any sediment that may run off the site and prevent it from running into the stream at the bottom of the canyon. At the end of mining the basin will probably be seeded with a grass mix along with the rest of the lower pad. Because the pond is so small it is expected that it will fill up with sediment over a short period of time. No one should have to maintain it and it should revert back to a natural state quickly.





## 111.9 Response

The small settling pond that is to be left is a very small sediment basin (10' X 20'). The purpose of the basin is to catch any sediment that may run off the site and prevent it from running into the stream at the bottom of the canyon. At the end of mining the basin will probably be seeded with a grass mix along with the rest of the lower pad. Because the pond is so small it is expected that it will fill up with sediment over a short period of time. No one should have to maintain it and it should revert back to a natural state quickly.





Recommended Revegetation Species List  
for

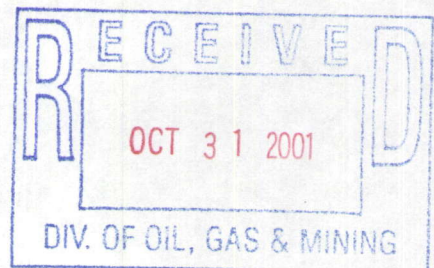
***TOPSOIL STOCKPILE STABILIZATION***

Geneva Rock Products, Inc.  
Levan Gypsum Mine  
M/023/016

Prepared by DOGM January 11, 2001

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
Thickspike wheatgrass	<u><i>Agropyron dasystachum</i></u>	3.0
'Piute' orchard grass	<u><i>Dactylis glomerata</i></u>	0.75
Ladac Alfalfa	<u><i>Medicago sativa</i></u>	1.0
Yellow sweetclover	<u><i>Melilotus officinalis</i></u>	0.5
Small burnet	<u><i>Sanguisorba minor</i></u>	1.5
	<b>Total</b>	<b>6.75 lbs/ac</b>

\*Recommended broadcast seeding rate



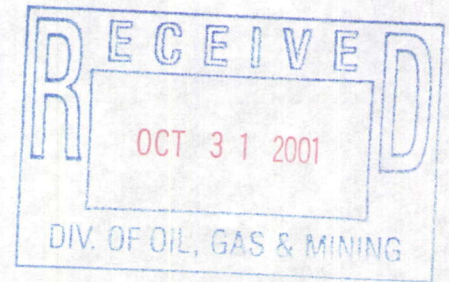


# Reclamation Surety Estimate

Geneva Rock Products Inc.

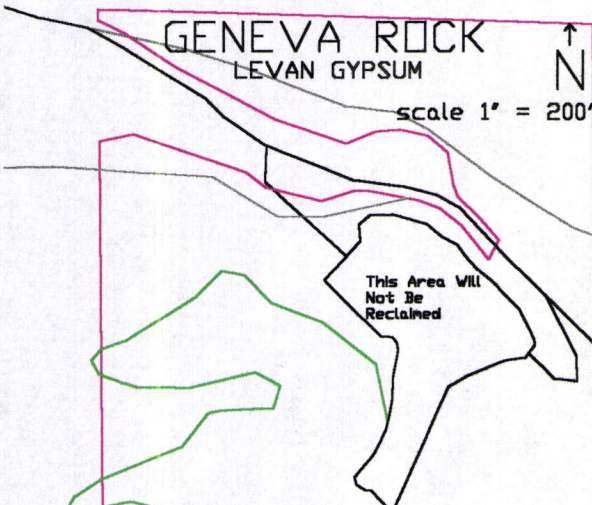
Levan Gypsum

M/023/016 - Juab County



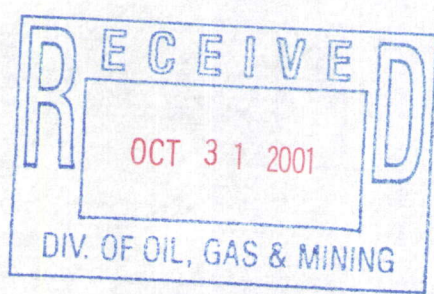
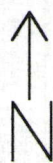
Activity	Quantity	Units	\$/Unit	\$	Cost	\$
safety gates, signs etc	2	ea	200			200
demolition of buildings/facilities	0	cf	0.24			0
debris & equipment-trucking	2	trips	50			100
debris & equipment-dump fees	20	ton	55	—		1,100
debris & equipment-loader	2	hours	166			332
debris & equipment-labor	4	hours	15			60
regrading facilities area	5	acre	364	—		1,820
regrading waste dump slopes	14500	cy	0.36	—		5,220
ripping dump tops	4	acre	271	—		1,084
ripping stockpile & compacted	5	acre	271	—		1,355
ripping pit floors	31.35	acre	271	—		8,496
ripping pit access roads	5.88	acre	271	—		1,594
creating safety barriers-highwall	1700	lf	0.12			204
ripping access roads	5.88	acre	271			1,355
regrading access roads	5.88	acre	364			2,140
sidecast material replacement	10177	lf	1.09			11,093
surface drainage-restore	200	lf	2			400
topsoil -dozer	14500	cy	0.36			5,220
topsoil -truck	6000	cy	2.6			15,600
composted manure	42.27	acre	300			12,681
broadcast seeding	5	acre	170			850
hydroseeding	37.27	acre	800			29,816
general site cleanup	42.85	acre	50			2,143
equipment mobilization	4	equipment	1000			4,000
supervision	30	days	386			11,580
Sub Total						118,443
10% contingency						11,844
escalator for 5y @ 3.13%/year						10,630
<b>Total</b>						<b>140,917</b>





GENEVA ROCK  
LEVAN GYPSUM


scale 1" = 500'



RECLAMATION MAP of the LEVAN GYPSUM MINE	
GENEVA ROCK PRODUCTS DREM, UTAH	
Drawn By: Tony Christofferson	DRG. #
Date: 10/30/01	II - E

 PROPOSED AREAS  
OF RECLAMATION  
INCLUDING ROADS

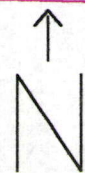
AREA WILL RECEIVE  
6" OF SOIL AND THEN  
BE SEEDED

 HIGHWALL TO REMAIN

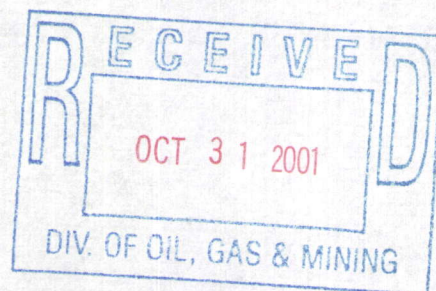


# GENEVA ROCK

## LEVAN GYPSUM



scale 1" = 200'



Tanks

5.12  
ACRES

Boneyard

Pond

.58 ACRES  
LOWER ACCESS  
ROADS

CRUSHER SETUP

ROAD  
3.35 ACRES  
(22' WIDTH)  
6641/F  
3.81 ACRES @ 25' WIDTH

SURFACE STRUCTURES  
MAP  
of the  
LEVAN GYPSUM MINE

GENEVA ROCK PRODUCTS  
DREM, UTAH

EXISTING FACILITIES

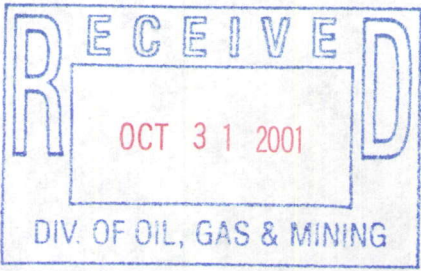
Drawn By:  
Tony Christofferson

DRG. #

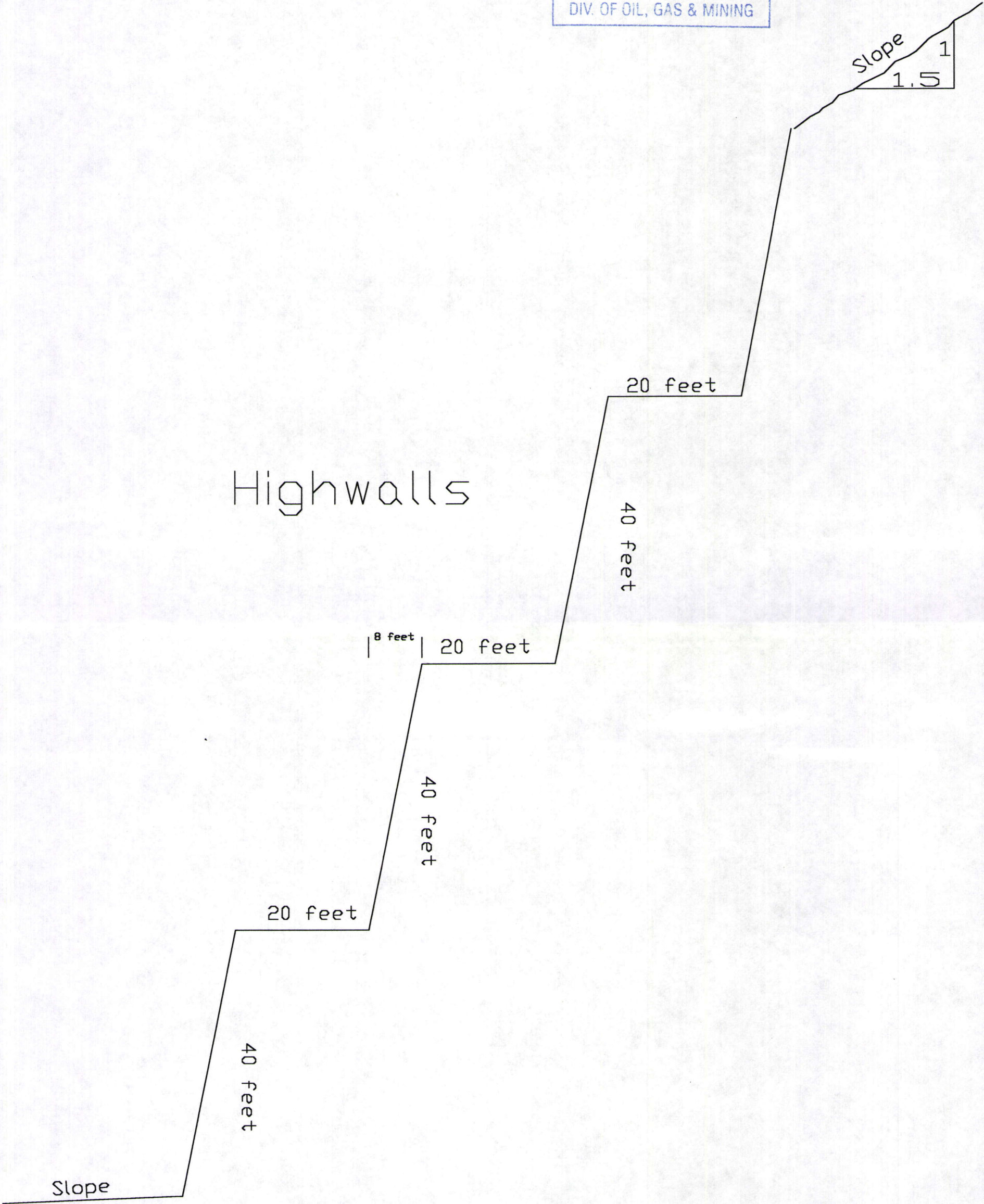
Date:  
10/30/01

II - D





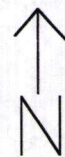
Highwalls





FRANKLIN R.  
PETERSON

GENEVA ROCK  
LEVAN GYPSUM



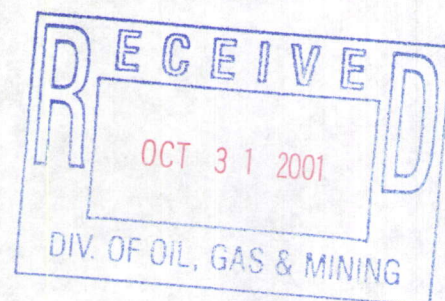
scale 1" = 500'

PYRAMID  
GYPSUM CO.

GENEVA  
ROCK  
PRODUCTS

LEVAN  
LAND  
COMPANY

BOYD TOM  
AAGARD



Claim #1

NATIONAL  
FOREST  
SERVICE

Claim #2

Claim #3

Claim #4

OWNERSHIP MAP  
of the  
LEVAN GYPSUM MINE

GENEVA ROCK PRODUCTS  
OREM, UTAH

OVERLAY OF PROPOSED  
DISTURBANCES

Drawn By:  
Tony Christofferson

DRG. #  
II - C-2

Date:  
10/30/01



GENEVA ROCK  
LEVAN GYPSUM

N  
↓

GENEVA  
BOOK  
PRODUCTS

BOYD TOM  
AAGARD

#1 Claim

3# 3151



This page is a reference page used to track documents internally for the Division of Oil, Gas and Mining

Mine Permit Number M0230016 Mine Name Lewan Gypsum  
Operator Geneva Rock Date 10-31-2000  
TO \_\_\_\_\_ FROM \_\_\_\_\_

☐ CONFIDENTIAL ☐ BOND CLOSURE ☐ LARGE MAPS ☐ EXPANDABLE  
☐ MULTIPUL DOCUMENT TRACKING SHEET ☐ NEW APPROVED NOI  
☐ AMENDMENT ☐ OTHER \_\_\_\_\_

Description YEAR-Record Number

☐ NOI ☒ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

Review of NOI

☐ NOI ☐ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

☐ NOI ☐ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

☐ NOI ☐ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

☐ TEXT/ 8 1/2 X 11 MAP PAGES ☐ 11 X 17 MAPS ☐ LARGE MAP

COMMENTS: \_\_\_\_\_

CC: \_\_\_\_\_